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# The Role of Disability in Labour Market Outcomes in Wales

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In the Summer 2004 issue of the *Welsh Economic Review*, Pickernell *et al* noted that economic inactivity was a major factor in the prosperity gap between Wales and the rest of the UK, and that while only 5.2% of all 16-74 year olds were economically inactive due to sickness or disability in England in 2001, the comparable figure in Wales was 9.2%. Their paper focused on an evaluation of the New Deal for Disabled People's Job Programme. The present paper is broader in scope, using data from both the *Labour Force Survey* (LFS) and the 2001 *Welsh Local Labour Force Survey* (WLLFS) to examine differences in labour force participation rates between non-disabled and disabled individuals within Wales and to make comparisons with the rest of Britain. The paper also comments on differences in labour market status between disabled and non-disabled workers who obtain jobs. In particular, gender differences in the labour market disadvantage of disabled individuals are explored.

## The Data

There has been a Welsh 'boost' to the LFS since March 2001. Rather than appearing quarterly, as is the case for the UK-wide LFS, the boost is undertaken annually, with households remaining in the sample for four years. Part of the sample in the WLLFS appears in the main LFS, while the remainder appear only in the boost. The effect of boosting the sample in this way is that while the main LFS sample includes 4,600 Welsh households each year, the WLLFS contains no less than 21,000, enabling disaggregation to unitary authority levels.

The definition of disability is far from straightforward. In the LFS and WLLFS, respondents are asked first if they have any health problems or disabilities that they expect to last for more than a year, and second, whether these would affect either the type or amount of paid work they could do. Only if positive answers are given to both questions is the individual classified as disabled (that is the disability is taken to be 'work-limiting'). Clearly, different types of disability are likely to have distinctive

effects on different types of job. Therefore, a further question asks about the type of health problem/disability, split into 17 categories. Due to problems of small cell sizes these are grouped here into just five related categories (as in Table 2) in order to determine whether there are significant differences among them in terms of their impact on labour market outcomes. Where multiple disabilities are reported, respondents are asked to state the main disability which is then classified accordingly.

## How Does Disability in Wales Compare with the Rest of Britain?

There are a number of reasons why differences are expected in the incidence of disabilities across regions. Using the UK LFS, Smith and Twomey (2002) point to factors such as the distribution of industry; the availability of and access to health care and adequate housing; lifestyle and dietary behaviour; levels of education and the age distribution of the population. In Wales, a history of employment in industries such as coal and steel may have left a residue of disability. On

average, the Welsh population is slightly older than in the rest of Britain, and it is also possible that higher levels of inactivity lead to greater numbers being classified as disabled (i.e. that the causation may not be solely from disability to inactivity).

As shown in Table 1, which is based on main LFS data, there exists substantial regional variation in work limiting disability among the working age population, with incidence varying between 13.2% in the South-East and 21.1% in the North (column 3). Wales, at 19.9% has the second highest incidence. There is evidence of a North-South divide consistent with differences in industrial structure. The higher incidence of disability among men than among women also reflects, at least in part, differences in their employment (industrial) distribution.

The composition of disability health problems also shows some regional variation when aggregated into five broad categories (Table 2). In all regions the most common disability/health problem is that

**Table 1: Regional Analysis of Disability Incidence (%).**

	<b>Males</b>	<b>Females</b>	<b>All</b>
	<b>1</b>	<b>2</b>	<b>3</b>
North	22.96	19.24	21.11
Yorkshire & Humberside	18.55	16.24	17.41
East Midlands	15.05	14.48	14.77
East Anglia	15.24	15.45	15.34
South East & London	13.29	13.09	13.19
South West	16.00	14.00	15.01
West Midlands	17.31	15.88	16.60
North West	18.96	17.17	18.05
<b>Wales</b>	<b>21.25</b>	<b>18.42</b>	<b>19.85</b>
Scotland	16.95	16.76	16.85
Great Britain	16.46	15.28	15.87

Notes: Data from the LFS, 2001. Working age population only.

**Table 2: Composition of Health Problems by Region (%).**

Main health problem	North	Yorks. & Humb.	West Midlands	East Anglia	South East & London	South West	West Midlands	North West	Wales	Scotland
Limbs	39.9	39.8	39.0	40.2	37.7	42.0	41.8	41.2	<b>41.4</b>	37.7
Sight/hearing	4.2	3.9	4.3	5.3	4.4	5.2	3.3	4.0	<b>4.1</b>	3.3
Skin/breathing & organs	32.4	30.4	29.7	30.5	30.8	29.2	30.8	28.9	<b>28.9</b>	31.5
Mental health	13.4	11.0	12.5	12.6	11.9	9.9	11.8	12.9	<b>14.3</b>	14.3
Other	10.3	15.0	14.6	13.4	15.4	13.8	12.3	13.6	<b>11.5</b>	13.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>	100.0

Notes: See notes to Table 1. Samples refer to the disabled only.

**Table 3: Economic Activity and the Disabled.**

	Employment rates			ILO Unemployment rate			Inactivity rate		
	Non-disabled (1)	Disabled (2)	(2) as percentage of (1)	Non-disabled (3)	Disabled (4)	(3) as percentage of (4)	Non-disabled (5)	Disabled (6)	(5) as percentage of (6)
North	78.16	31.76	(40.6)	5.52	3.39	(162.8)	16.32	64.86	(25.2)
Yorks. & Humb.	80.62	38.83	(48.2)	3.59	4.59	(78.2)	15.79	56.58	(27.9)
East Midlands	81.46	41.92	(51.5)	3.47	4.77	(72.7)	15.06	53.30	(28.3)
East Anglia	84.65	48.52	(57.3)	2.68	5.24	(51.1)	12.67	46.24	(27.4)
South East & London	80.49	46.53	(57.8)	3.47	4.33	(80.1)	16.04	49.14	(32.6)
South West	84.49	49.78	(58.9)	2.70	4.80	(56.3)	12.81	45.41	(28.2)
West Midlands	81.26	40.66	(50.0)	3.80	4.68	(81.2)	14.94	54.65	(27.3)
North West	80.02	33.39	(41.7)	3.56	3.63	(98.1)	16.42	62.98	(26.1)
<b>Wales</b>	<b>78.30</b>	<b>26.65</b>	<b>(34.0)</b>	<b>4.18</b>	<b>4.38</b>	<b>(95.4)</b>	<b>17.52</b>	<b>68.97</b>	<b>(25.4)</b>
Scotland	81.37	32.38	(39.8)	5.16	4.94	(104.5)	13.47	62.68	(21.5)
Great Britain	80.96	39.89	(49.3)	3.72	4.40	(84.5)	15.32	55.71	(27.5)

Notes: See notes to Table 1. Employed includes employees, self employed, government employment and training programmes and unpaid family workers. ILO Unemployment includes those without a job who were able to start work in the two weeks following their LFS interview and had either looked for work in the four weeks prior to interview or were waiting to start a job they had already obtained. Inactive includes those seeking and unavailable for work and those not seeking work. It therefore includes those people who do not work because they are full-time students, caring for other people, retired, sick or disabled, they do not want to work or they think there are not jobs available. All rates are defined as a proportion of the working age population for the relevant sub-group (disabled or non-disabled).

affecting limbs (including arthritis or rheumatism), followed by skin, breathing and organ problems. The latter include chest problems such as asthma and bronchitis, heart problems, stomach and digestive problems and diabetes. It is also worth noting that mental health problems, including depression, nervous disorders and mental handicap affect a higher proportion of individuals in Scotland and Wales than elsewhere, and these have been shown in previous studies to have the most detrimental effect on labour market outcomes.

### The Labour Market Impact of Disability

Wales has the highest overall inactivity rate in Britain, and previous work suggests that high levels of disability are

an important contributory factor, although this varies according to type of disability (Blackaby *et al* 2003). For men, the growth in long term sickness among those of working age has been reported to constitute the main explanation for the rise in inactivity, with some suggestion that the social security system may itself encourage early retirement<sup>1</sup>. Even when factors such as relative supply and demand pressures in the labour market have been accounted for, the incidence of long-term sickness remains high in Wales. Whatever the reason for this, ill health is found to affect labour market inactivity much more strongly in Wales than in the rest of Britain, and this applies to every form of reported illness apart from learning difficulties.

As shown in Table 3, there is a dramatic difference in the employment rate (i.e. those in employment and excluding the unemployed who are conventionally included in the activity rate) across Great Britain between the non-disabled and disabled populations, with the employment rate for the former twice as great as for the latter. Nonetheless, the percentage of the disabled who are in employment varies substantially across regions from 26.7% in Wales to 49.8% in the South-West (column 2). This difference is much more substantial than the regional differences in the employment rate for the non-disabled, as demonstrated in the third column, which shows that the employment rate of the disabled relative to the non-disabled is lower in Wales than in any other region at 34%.

**Table 4: Regional Pay by Gender and Disability (£ p.h.).**

	Male			Female			All		
	Disabled	Non-disabled	Disabled pay as % of non-disabled pay	Disabled	Non-disabled	Disabled pay as % of non-disabled pay	Disabled	Non-disabled	Disabled pay as % of non-disabled pay
North	7.86	9.17	85.7	6.66	7.15	93.1	7.29	8.14	89.6
Yorkshire & Humberside	7.95	9.36	84.9	6.37	7.30	87.3	7.21	8.30	86.7
East Midlands	8.54	9.78	87.3	7.12	7.32	97.3	7.84	8.57	91.5
East Anglia	8.60	10.17	84.6	8.85	7.84	112.9	8.72	9.01	96.8
South East & London	10.72	13.19	81.3	8.11	9.58	84.7	9.38	11.38	82.4
South West	8.94	10.27	87.0	7.21	7.41	97.3	8.12	8.81	92.2
West Midlands	9.54	9.87	96.7	7.16	7.57	94.6	8.37	8.73	95.9
North West	8.51	9.86	86.3	7.91	7.57	104.5	8.22	8.67	94.8
Wales	9.39	9.28	101.2	5.78	7.51	77.0	7.62	8.35	91.3
Scotland	8.19	10.03	81.7	6.74	7.80	86.4	7.46	8.88	84.0
Great Britain	9.21	10.88	84.7	7.40	8.15	90.8	8.31	9.50	87.5

Notes: See notes to Table 1.

Table 3 also shows that the ratio of ILO unemployment of the non-disabled compared to the disabled is higher in Wales than the mean rate for all regions. Though inactivity is higher in Wales than in Scotland, the inactivity rate of the non-disabled relative to the disabled is even lower in Scotland. Nonetheless, the overall picture is clear – the probability of gaining employment is low in Wales, and for the disabled, lower than anywhere else in Britain.

Does the disadvantage that the disabled face in obtaining employment carry over into employment itself, in the sense that the disabled are employed in occupations below their capabilities or receive lower pay than the non-disabled, given their occupation? Care needs to be taken in interpreting the data here, since those disabled workers who gain employment may be of above average capabilities, while in contrast,

disability may reduce productivity. Table 4 shows that disabled men earn on average 15% less than non-disabled men and disabled women about 9% less than non-disabled women, though there is no correction here for any differences in occupational distribution. In contrast, hourly pay in Wales appears to be slightly higher for disabled men than non-disabled men and the same appears to be true for disabled women in East Anglia and the North-West relative to their non-disabled counterparts. However, since sample sizes are relatively small for some regions in the British LFS, these results may not always be reliable.

More reliable estimates for Wales can be obtained from the WLLFS (Table 5). These data reveal a higher employment rate for the disabled than in the main LFS, while for the non-disabled, figures from the two sources are relatively

close. The upshot is that the ratio of the disabled to non-disabled employment rates is 36.9%, as opposed to 34.0% in the main LFS in Table 3, although even this remains lower than the figures for other regions reported previously. ILO unemployment in Wales is lower for both the disabled and non-disabled in the WLLFS, and is actually lower for the disabled than the non-disabled, so that the unemployment ratio rises from 95.4% to 107.5%. The inactivity rates in the two data sources are relatively close, so the inactivity ratio is much the same at around (25%). Finally, in terms of earnings, the WLLFS has much lower earnings for disabled men than in the main LFS sample (£8.33 per hour as opposed to £9.39 per hour in Table 4), but higher earnings for disabled women. These results, which as stated previously, are much more reliable, suggest that both disabled men and women earn around 10% less than the

**Table 5: Welsh Boost Statistics.**

	Employment rate	ILO Unemployment rate	Inactivity rate	Pay per hour (£)
<b>Non-disabled</b>				
Men	83.77	4.73	11.50	9.24
Women	73.55	3.32	23.13	7.15
Total	78.57	4.01	17.42	8.15
<b>Disabled</b>				
Men	30.81	5.12	64.07	8.33
Women	26.87	2.07	71.01	6.43
Total	29.01	3.73	67.27	7.42

Notes: Data from the WLLFS, 2001. Working age population only. Rates defined as in Table 3.



non-disabled. Overall, disabled persons in Wales thus appear to fare worse in terms of the probability of employment relative to the non-disabled than do their counterparts elsewhere in Britain. However, this position is reversed among those in employment, where the earnings of the disabled in Wales, while below those of the non-disabled on average, appear slightly better in

relative terms than those of the disabled in other regions.

Table 6 contains summary data relating to the working age population for a number of further variables used in the subsequent regression analysis (see the following section). For a small number of variables (age, tenure, experience, number of dependent children, number

of health problems and usual overtime hours) these figures are mean values. For the remaining variables, the reported figures denote the percentage of the sub-group with a particular characteristic (e.g. married) or in a particular category such as occupation or unitary authority. The figures for unitary authorities therefore help to determine whether the disabled are

**Table 6: WLLFS Summary Statistics**

	Non-disabled		Disabled	
	Male	Female	Male	Female
Anglesey	4.52	4.28	3.65	3.70
Gwynedd	5.72	5.70	5.32	3.78
Conwy	3.83	3.94	3.65	3.30
Denbighshire	3.74	3.60	2.85	3.58
Flintshire	4.80	4.75	3.65	3.82
Wrexham	4.77	4.60	3.99	4.13
Powys	4.09	3.86	2.95	2.78
Ceredigion	3.66	3.83	2.88	2.54
Pembrokeshire	5.50	5.63	5.73	6.20
Carmarthenshire	4.78	4.86	5.66	5.41
Swansea	4.43	4.08	4.32	4.33
Neath and Port Talbot	5.46	5.80	8.44	8.03
Bridgend	4.75	4.96	4.79	4.57
Vale of Glamorgan	5.21	5.22	3.45	3.66
Rhondda, Cynon, Taff	4.52	4.86	6.16	6.84
Merthyr Tydfil	2.95	2.94	5.16	5.17
Caerphilly	4.54	4.53	5.66	6.16
Blaenau Gwent	3.83	3.81	5.29	5.25
Torfean	4.16	4.12	4.96	5.56
Monmouth	5.18	4.78	3.62	3.62
Newport	4.55	4.46	3.95	3.82
Cardiff	5.00	5.37	3.88	3.78
Married	57.50	56.77	62.12	61.80
Age (years)	38.67	37.11	48.01	44.26
Degree or equivalent	12.46	11.50	4.92	4.45
Other higher education	13.12	14.28	7.17	8.65
A level or equivalent	29.52	18.24	25.89	11.26
O level or equivalent	16.62	25.04	9.26	18.55
Other qualification	12.16	11.28	13.77	13.34
No qualification	16.12	19.65	38.99	43.75
White	98.44	98.36	98.89	98.65
Experience (years)	21.39	19.81	31.82	28.03
Dependent children	0.67	0.85	0.44	0.63
Social housing	10.70	14.62	26.71	30.62
Home owned outright	22.13	19.60	30.80	23.94
Home mortgaged	59.35	57.05	33.75	37.34
Number of health problems	0.20	0.20	2.99	3.04
Other earner in household	68.57	70.74	42.30	47.58

**Table 6: WLLFS Summary Statistics (continued)**

	Non-disabled		Disabled	
	Male	Female	Male	Female
<b>Employed only</b>				
Managers and Senior Officials	14.37	8.24	12.57	8.74
Professional	11.21	9.91	8.74	6.96
Associate professional	11.79	12.75	11.37	8.00
Administrative	4.34	21.62	5.03	17.63
Skilled trades	23.29	2.76	23.83	4.00
Personal service occupations	2.07	14.12	4.15	16.44
Sales and customer service	4.18	12.98	4.81	15.85
Process, plant and machine operatives	16.61	4.15	15.96	6.52
Elementary occupations	12.14	13.48	13.55	15.85
Agriculture and fishing	3.37	1.29	5.37	1.33
Energy and water	2.34	0.53	1.31	0.15
Manufacturing	25.74	9.87	26.18	10.81
Construction	13.60	1.26	13.47	1.63
Hotels and distribution	16.48	23.24	15.12	26.37
Transport and communication	7.81	2.85	7.78	3.70
Banking and finance	9.36	11.01	8.98	7.85
Public admin and health	16.32	44.21	16.10	41.33
Other services	4.95	5.73	5.59	6.81
Ill in reference week	1.74	2.96	8.20	8.15
Small firm	25.44	34.66	28.06	36.17
Part time	7.20	41.96	13.70	49.70
Tenure (years)	8.73	7.14	9.14	7.60
Public sector	18.56	37.31	18.39	33.58
Usual overtime hours (number)	3.06	1.88	2.87	1.65

Notes: Working age population. Population shares (%) for each of the comparator groups for all variables except for age, experience and tenure (mean years), dependent children, number of health problems and usual overtime hours (mean number).

over- or under-represented in relation to the percentage of non-disabled drawn from each unitary authority assuming that there is no sampling bias. The disabled are over-represented in the Objective 1 area relative to the rest of Wales, since unitary authorities in West Wales and the Valleys have two-thirds of the non-disabled in the sample but three-quarters of the disabled. Limiting the analysis to the Valleys (Neath/Port Talbot, Rhondda, Merthyr and Blaenau Gwent) these have 17% of the non-disabled, but a quarter of the disabled. This confirms a link between the extent of disability and low incomes. It should be noted that the incidence of disability in the Objective 1 area, but excluding the Valleys, is the same as in the rest of Wales. Nonetheless, even excluding the Valleys, the incidence of disability is higher in Wales than elsewhere in Britain.

The distribution of workers over

occupational groups suggests that the disabled are over-represented in less skilled occupations and under-represented in higher level occupations. The disabled are much older on average than the non-disabled – 48 in the case of men compared to 39, and 44 in the case of women compared to 37. This should raise wages to the extent that this reflects labour market experience or tenure. However, the disabled are more likely to work part-time which will have the reverse effect. Further, on average the disabled are much less well qualified in terms of educational attainment levels than the non-disabled.

#### **Explaining Labour Market Outcomes for the Disabled**

The results of a regression model explaining the determinants of labour force participation, using separate equations for disabled men, non-disabled men, disabled women and non-disabled women are summarised in

Table 7. Broadly, particular personal and other household characteristics have similar effects on the probability of employment for both the disabled and non-disabled, and these effects are similar in Wales to the rest of Britain (Jones *et al*, 2003, 2004).

For all four groups, educational qualifications have a strong effect in increasing the likelihood of being in employment, but this effect is much larger for the disabled, emphasising the importance of gaining qualifications for this group. There are also strong age and marital status effects, the latter being positive for men and negative for women, though insignificant in the case of disabled women. Dependent children reduce the likelihood that women will be in employment, whether disabled or not. Having another earner in the household raises the likelihood of being in employment for all groups, as does living in a mortgaged home. Having

**Table 7: Determinants of Labour Force Participation (Probit Regression Model).**

	Men		Women	
	Disabled	Non-Disabled	Disabled	Non-Disabled
Qualifications	✓	✓	✓	✓
Age	✓	✓	✓	✓
Married	✓	✓	-	✓negative
Unitary authorities	✓(3)	✓(5)	✓(10)	✓ (12)
Race	✓	✓	-	✓
Dependent children	-	✓	✓negative	✓negative
Other earner in household	✓	✓	✓	✓
Social housing	-	✓negative	-	-
Home owned	-	-	-	✓
Home mortgaged	✓	✓	✓	✓
Number of health problems	✓negative	-	✓negative	-

Notes: ✓ indicates significant at the 10% level or better. A full set of unitary authority dummies is included, with the exception of Cardiff, which is used as the reference category. Parentheses indicate the number of unitary authority coefficients where participation was significantly different from the omitted reference group.

**Table 8: Determinants of Earnings (Human Capital Model).**

	Men		Women	
	Disabled	Non-Disabled	Disabled	Non-Disabled
Qualifications	✓	✓	✓	✓
Experience	✓	✓	✓	✓
Tenure	✓	✓	-	✓
Married	-	✓	-	-
Unitary authorities	-	✓(11)	-	✓(18)
Race	✓	-	-	-
Social housing	-	-	✓(negative)	✓(negative)
Home owned	-	✓	-	-
Home mortgaged	✓	✓	-	✓
Number of health problems	-	-	-	✓(negative)
Ill in reference week	✓(negative)	✓(negative)	-	-
Occupation	✓(6)	✓(8)	✓(7)	✓(8)
Industry	✓(1)	✓(6)	✓(6)	✓(8)
Small firm	✓(negative)	✓(negative)	✓(negative)	✓(negative)
Part-time	-	-	-	-
Public sector	-	-	✓	✓

Notes: ✓ indicates significant at the 10% level or better. In the case of unitary authority, industry and occupation, figures in parentheses indicate the number of instances where there were significant coefficient differences relative to the omitted category ('Other services' and 'Manager and senior official' for industry and occupation respectively; Cardiff for unitary authority).

more than one health problem reduces the probability of employment for the disabled. Finally, being in a particular unitary authority is more likely to affect the likelihood of being in employment for the non-disabled than the disabled and for both disabled and non-disabled women relative to men. When types of disability were added to the participation equations it was found that

those with mental health problems were less likely to participate in the labour force than those with other types of disability.

As with employment, it appears that earnings in Wales are determined in a qualitatively similar manner for disabled and non-disabled men and women (Table 8). There are however some

differences. For example, disabled men's earnings are unaffected by marital status, outright home ownership or unitary authority in which they are located, and disabled women's earnings are unaffected by marital status, tenure or having a mortgage on their home. When type of disability was added to the wage equations, earnings were lower for women suffering from mental health

problems relative to the other types of disability, but for men there were no significant differences across different types of disability.

### Conclusions

The most striking difference between labour market outcomes for the disabled and non-disabled in Wales is in labour force participation. By comparison, differences in employment are less serious. Not only is the incidence of disability higher in Wales than almost any other region, but its impact is greater in reducing the likelihood of being in the labour market. Wales suffers relative to the rest of Britain in having the highest proportion of the disabled with mental health and multiple health problems, both of which adversely affect the probability of being in employment. In terms of policy, there are striking differences in the participation rates for disabled women across unitary authorities<sup>2</sup>, and if these could be eliminated this would improve the relative position of disabled women. In general, the labour market disadvantage of disabled women is greater than that of disabled men in Wales<sup>3</sup>. Both disabled men and women have on average fewer qualifications than the non-disabled and the impact of qualifications on employment is higher for the disabled, so raising qualifications levels could substantially improve the

employability of the disabled. Precisely what proportion of the disabled is capable of work, given favourable conditions is, however, unknown.

### Endnotes

- 1 Bell and Smith (2004) examined the interaction of skills, long term sickness and the disability benefit system for men in the UK over the course of the 1990s. They concluded that the generosity of the disability benefit system at that time relative to that of unemployment insurance, particularly for unskilled workers may have encouraged such workers to exit the labour market. However, they believe this experience is unlikely to be repeated as disability benefits are now much less generous than they were.
- 2 See Jones *et al* (2004) for evidence on this.
- 3 In the sense that the 'unexplained' component of the wage disadvantage faced by the disabled, which is conventionally interpreted as reflecting 'discrimination', is greater for women. See Jones *et al* (2004) for a full discussion.

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